

## TECHNIQUE DESCRIPTION

# Firebow – fire by friction



### Introduction

Back to Basic! We are going to make fire with a bow and drill. This technique is the most famous skill of making fire. This is one of the few methods to make fire with only natural materials which you can find anywhere, you only need to bring your knife... and shoes.

### Background information

#### Fire by friction

The firebow is a way of making fire by purely the heat of friction. To demonstrate friction and the fact that it produces heat, you can rub your hands firmly over each other. First you feel nothing but very soon your hands will turn hot and even so hot that you have to stop or you'll burn yourself.

The firebow works with the same principle. You create friction between the drill and plank by turning the drill very fast while you push the drill hard on the plank. First, the drill will drill a hole in the plank while producing dark dust. In the end the heat of the friction will heat up this dust and create a little ember inside the dust. This ember will be the start of your fire.

#### Right types of wood and materials

What you need are a drill, Bow stick and cord, plank, bearing block, (birch) bark for collecting the ashes (ember), green leaves and a bit of hay / dry grass to light the fire with the ember. Instead of grass or hay you also can use brown ferns, dead nettles, etc.

#### Drill and plank

There are many stories about types of wood to use but we recommend using both for drill and planking the same type of soft wood. Most important factor is that the wood of the drill and plank must be completely dry! When it's wet you can use the inside of a dry log. Best for drill and plank are lime (*tilia*), willow (*salix*), hazel (*corylus*) or ivy (*hederea helix*). Also combinations will work. Second best are alder (*alnus*), poplar (*populus*), birch (*betula*), cherry (*prunus*), elder (*sambucus*), elm (*ulmus*), horse chestnut (*aesculus*), maple (*acer*), oak (*quercus*) – hard!, pine (*pinus*) or spruce (*picea*) – hard because of the resin or fig (*figus*).

The drill needs to be a straight (round) piece of wood with a diameter of ca. 2cm and a length of ca. 20cm, e.g. a firm branch. Carve a sharp point at the top and a round shape at the bottom. For the plank you need to get a flat piece of wood, make sure the piece is wide enough to fit the drill, and long enough so you can stand on the plank with your foot.

#### Bearing block

For bearing block you can use any hard wood (e.g. oak, beech, etc.), stone with a hole or even a piece of bone. Carve the bearing block in a way it fits nicely into your hand.

#### Bow and cord

As bow you need a curve shaped branch from ca 70cm, firm and non flexible. Make carve at both ends where you can attach the cord. As cord you can take any kind of strong rope, e.g. your shoe laces.

## The technique of making fire with the fire bow

### Step 1: Preparations

1. If there is no good hole in the plank to start with, make a little hole with a knife in the plank **[pic 2]**.
2. Wrap (twist) the cord around the drill so the drill is at the outside of the cord **[pic 4]**.
3. Put the plank at the ground and kneel down on one knee (left knee if you're right handed) and place the other foot at the opposite end of the plank **[pic 5]**
4. Put a leave in the bearing block for decreasing the friction at the top **[pic 4]**.
5. Put the drill with the small point in the bearing block and the other side in the hole of the plank **[pic 5]**.
6. Place your arm around your knee **[pic 5]** and put your weight on this knee. The arm around the knee is for absorbing the shocks from changing direction with the bow
7. Grab with your right hand (if you're right handed) not only the bow but also the cord with your fingertips. During the process you can vary the tension of the cord with your grip.
8. Start slowly moving the bow back and forwards, use the total bow **[pic 5]**.
9. Go faster and push firmer on the bearing block till it starts smoking **[pic 6]**, both hole and drill are now perfectly fitting
10. Stop and cut a v-shape from the side of the plank to the heart of the hole **[pic 7]**. In this v-shaped cut the dark dust will be collected, which will turn out to be the glowing tinder.

### Step 3: making fire

11. Put a piece of bark under the v-shaped cut to collect the dust **[pic 8]**
12. Start from step 2 till it starts smoking again (step 9)
13. Keep on going till the whole v-shaped cut is filled with dust
14. When the cut is totally filled push harder on the bearing block and go faster with the bow till real thick smoke arises.
15. When you see also smoke coming from the dust, gently stop, and try to get your foot from the plank without moving it. Check if the dust is still smoking. If not, leave the dust in place and try again!
16. Use your knife to very slowly remove the plank, so that the dust will stay in place, like a piece of pie **[pic 11]**.
17. Don't blow; this will blow away all the dust so the ember will fall apart. Wave gently with your hand till you see the ember glowing. It will take a while...
18. Put some dry grass, hay, dead ferns, etc. on top of the ember or put the ember with the bark in a bird nest of hay **[pic 12]**
19. Start blowing with long blows directly in the ember, push the hay firmly to the ember **[pic 13]**
20. No success without real flames of hard work! **[pic 14]**

### **Safety:**

- Be sure both a bucket of water and fire blanket are present
- Be careful with flammable clothing (polyester, fleece, etc.) and flammable materials on the underground.
- Be sure you know how to use a fire extinguisher.
- Contact team leader for first aid (plasters) and serious injuries.
- When the hay is burning, participants can panic because of the big flames and lots of smoke. Be sure that the burning materials keep on the ground.



# “vuurboog” firebow / fire with friction



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